RECEIVED
CENTRAL FAX CENTER
JUN 0 7 2007

REMARKS

Claims 1 and 3-6 are now in this Application, and are presented for the Examiner's consideration.

Rejection of Claims under 35 U.S.C. §112, first paragraph

Claims 1 and 3-6 were rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement on the ground that the claims contain subject matter which was not sufficiently described in the specification.

Specifically, it was stated that claim 1 now requires releasing the bending stress and stress concentration within a predetermined stress, and that there is no support for the releasing being within a stress, either predetermined or not. In order to overcome this rejection, this language "within a predetermined stress" has been deleted from claim 1.

In addition, it was stated that the language of the fixing roller immediately following the optical fiber standard value controller unit is not supported in the specification. Although applicant disagrees, the word "immediately" has been delete from claim 1 in order to advance prosecution.

Accordingly, it is respectfully submitted that the rejection of claims 1 and 3-6 under 35 U.S.C. §112, first paragraph, has been overcome.

Rejection of Claims under 35 U.S.C. §112, second paragraph

Claims 1 and 3-6 were further rejected under 35 U.S.C. §112, second paragraph, as being indefinite.

It was stated that claim 1 now requires releasing stress and stress concentration "within a predetermined stress," and it was stated that it is not understood what is meant by this releasing being "within" another stress.

However, as discussed above, the phrase "within a predetermined stress" has been deleted from claim 1.

It was also stated that the term "curvature" is indefinite as to its meaning and is not defined in the specification. Second, the Examiner notes that, in the drawings, where the fiber meets the rollers, the fiber takes the curvature of the roller and thus the fiber will undergo the same stress. The Examiner particularly notes the equation at page 4, line 8 in which the equation makes no mention of the length of the bend. The Examiner states, for example, roller 17 of Fig. 5 shows the fibers bent around 17, perhaps about 30 degrees. The Examiner states, based upon applicant's equation, the stress would be the same as if it were bent 90 degrees.

However, page 9, lines 6-12 of the specification states:

"the adjusted curvature radius R2 according to the present invention is larger than the curvature radius R1 in which

only the fixing roller is installed. Since the bending stress is in inverse proportion to the size of the radius R like $\sigma_b = Ey/R$, in the optical fiber drawing apparatus of the present invention, it is possible to decrease the bending stress applied to the optical fiber by increasing the curvature radius R2 which is adjusted using the fixing roller 17 and the moving roller 18 and 19."

Moreover, the adjusted curvature radius R2 is clearly shown in Fig. 3 as being the overall curvature of the optical fiber around all three rollers 17-19, while the curvature radius R1 of the fixing roller 17 only is clearly shown in Fig. 3 as well. Since it is only necessary to provide sufficient disclosure for one skilled in the art to understand the invention, it is submitted that, in view of the discussion at page 9, lines 6-12 of the specification and the drawn radii R1 and R2 in Fig. 3, one skilled in the art would readily understand the meaning of the adjusted curvature radius R2. It is therefore submitted that the recitation of the curvature of the optical fiber is sufficiently defined and shown in the specification in a sufficient manner to enable one of ordinary skill in the art to understand the same.

However, in an attempt to make this language clearer, claim 1 has been further amended to recite the curvature of the optical fiber as the curvature which is in contact with and drawn around

the movable rollers and the fixing roller, which is clearly shown in Fig. 3 by the optical fiber being in contact with and drawn around fixing roller 17 and moving rollers 18 and 19.

As to the Examiner's statement that the equation at page 4 makes no mention of the amount of bend, the following is noted. We take two situations. The first is where the optical fiber is bent only around roller 17 which has a radius R1. Assume that the optical fiber arrives at roller 17 from a first direction or angle and departs roller 17 in a second direction or angle, for example, a change of the drawing direction of 180°. The second is where the optical fiber is bent around rollers 17-19 and has a radius R2. Assume that the optical fiber arrives at roller 17 from the same first direction or angle as in the first situation and departs roller 19 in the same second direction or angle as the first situation, that is, a change of the drawing direction of the same 180°. In other words, in both situations, one where only roller 17 is used and the other where rollers 17-19 are used, the input direction and output direction are the same, that is, the change in the drawing direction or amount of turning of the optical fiber is the same in both cases, so that the only variant is the degree of bending which relates to the radius R1 or the radius R2. In such case, there would be more bending of the optical fiber when only the roller 17 is used, and thereby more stress on the optical fiber. This is because, according to

the equation at page 4, line 8, the stress on the optical fiber for the larger radius R2 would be less than the stress on the optical fiber for the smaller radius R1 for the same amount of turning.

Accordingly, it is respectfully submitted that the rejection of claims 1 and 3-6 under 35 U.S.C. §112, second paragraph, has been overcome.

Prior Art Rejections

Claims 1 and 3-6 were rejected under 35 U.S.C. §103(a) as being obvious from U.S. Patent No. 6,519,404 to Yoshida et al and U.S. Statutory Invention Registration No. H1268 to Askins et al and further in view of Butterworth-Heinemann (Dictionary of Engineering Terms) and Sclater et al (Mechanisms & Mechanical Devices Sourcebook 2001).

In Yoshida et al, the only rollers that move in a translation direction, rather than a swinging sense, are rollers 4 and 5 in Fig. 2. Guide rollers 4 and 5, however, only move together between the lower position 4', 5' and the upper position 4, 5 in Fig. 2. There is no disclosure or suggestion that they are independently mounted on different brackets for separate movement, for example, in different directions. In fact, Yoshida et al states at column 6, lines 39-41 that "[t]he movement of the movable guide rollers can be implemented, for example, by use of

a guide rail and a chain not illustrated" (emphasis added). In other words, there is a single guide rail for both rollers 4, 5 in Yoshida et al, because both rollers 4, 5 are moved in the same direction, at the same time, and for the same distance. Yoshida et al does not teach separate brackets for independently moving rollers 4, 5, and in fact, teaches away from the same by using a single guide rail for both rollers 4, 5.

With the present invention, the optical fiber between the fixing roller and the winding apparatus is substantially circular. To achieve this object, the moving rollers 18, 19 must be able to move, respectively, in different directions while guiding the fiber. Thus, each roller 18, 19 is separately mounted on a separate bracket 10 which thereby permits movement of rollers 18, 19 in different directions. For support for this limitation, see, for example, page 13, lines 4-6 of the present application, which discloses a plurality of brackets 10 which may be provided after the fixing roller in order to reciprocate the moving rollers 18, 19.

As discussed above, Yohsida et al does not disclose or even remotely suggest that the two moving rollers are mounted for movement, respectively, in different directions, in order to reduce the stress on the fiber. Further, there would not be any need to do so in Yoshida et al since Yoshida et al is not concerned with providing a circular path of travel for the fiber,

but rather, rollers 4, 5 are provided to increase the length of the free zone, and thereby provide a greater length over which the optical fiber can untwist. Thus, there is no suggestion in Yoshida et al, nor any logical reason, to provide separate movement of rollers 4, 5. In fact, separate movement of rollers 4, 5 in different directions may result in more twisting of the fiber, contrary to the teachings of Yoshida et al, such that Yoshida et al would teach away from separate movement of rollers 18, 19.

Thus, each roller 18, 19 of the present invention is mounted to a separate bracket 10. The specification teaches that each roller 18, 19 can move in a translation direction in a slot or vertical direction guide 21 of the respective bracket 10, and also, each bracket 10 can pivot around pivot joint 22. Thus, each roller 18, 19 is movable in X- and Y- directions in translation, separately from each other.

This is also distinguished from roller 23 of Yoshida et al, for example, which only rotates about its own axis as shown in Fig. 4 thereof, and does not move in a translation direction.

It must be also pointed out that it is not just the fact that two rollers can be moved independently, but rather, the fact that two rollers can move in translation on separate brackets, and thereby independently of each other in the context of the present claimed invention of an optical fiber drawing apparatus.

In Askins, L-shaped bracket 62 was noted for mounting two idler rollers 60. However, the idler rollers 60 are both mounted on the same bracket 62. See column 5, lines 58-63. Thus, if bracket 62 is moved, both idler rollers 60 move therewith. Therefore, even if Askins et al is combined with Yoshida et al, the claimed present invention would still not be disclosed or suggested in which there are at least two brackets, each bracket connected to a respective one of said at least two movable rollers to provide translation movement of the respective one of said at least two movable rollers in at least one translation direction relative to the optical fiber, independently of the other.

Askins was relied upon to show it is not an invention to use a bracket and that it would have been obvious to provide a single bracket for each wheel, with no new, unexpected result for additional adjustability or for mere duplication of parts. The Examiner states that it also would have been obvious to separate the single bracket into two separate brackets, so that a person could separate one from the other, to make replacement of only one wheel more quickly.

However, the case law makes it clear that, for such a modification, there must be some suggestion in the art or some logical reason to do so. The Examiner has failed to indicate anywhere in the art of record where there is a suggestion to so

modify the reference. Further, the logical reason to do so must be without regard to impermissible hindsight using applicant's own invention disclosure. The Examiner has failed to indicate why one skilled in the art would want to modify the reference, since there appears to be no logical reason, absent the teachings of the present application.

As discussed above, Askins et al shows a single bracket 62 for mounting two idler rollers 60. Further, as discussed above, in Yoshida et al, guide rollers 4 and 5, only move together between the lower position 4', 5' and the upper position 4, 5 in Fig. 2. Thus, there is no logical reason to provide two brackets, one for each roller, to provide independent adjustment, since neither Yoshida et al nor Askins et al provides for such independent adjustment. Such modification is unwarranted by the references, and constitutes impermissible hindsight.

In this regard, claim 1 recites "at least two brackets, each bracket connected to a respective one of said at least two movable rollers to provide translation movement of the respective one of said at least two movable rollers in at least one translation direction relative to the optical fiber, independent of each movable roller relative to the other."

This aspect is nowhere disclosed or even remotely suggested by either reference, and in fact, both references teach away from this aspect. Specifically, Askins et al provides a single

bracket for two rollers, and Yoshida et al teaches that guide rollers 4 and 5, only move together between the lower position 4', 5' and the upper position 4, 5 in Fig. 2.

It is submitted that the cases cited in the Office Action are not relevant. In In re Harza, the cited passage merely relates to duplication of parts. In the present instance, there is not mere duplication of parts, but rather, the use of two brackets rather than a single bracket. Further, the cited passage states that duplication of parts has no patentable significance unless a new and unexpected result is produced. In the present instance, the new and unexpected result is the substantial reduction in the bending stress on the optical fiber that could result in cracking of the optical fiber.

In In re Stevens, the court held that mere adjustability is not patentable where there is an art-recognized need for adjustability. In this case, there was a teaching in the art for adjustability. There is no teaching, suggestion or logical reason from the art to provide the two brackets for independent movement of the rollers, as claimed, for the reasons given above.

As to In re Dulberg, applicant does not see the relevance of this case. The cited passage merely discusses a cap in the prior art that is not removable, in comparison to the invention of making the cap removable. This has no relation to providing two brackets for independent movement of the rollers. Again, from

this case, it must have been desirable to provide the same, which means that there must have been some logical reason, without using the applicant's invention, to make the cap removable. Clearly, as discussed above, absent the teachings of the present invention, there is no suggestion from the prior art and no logical reason to modify the cited references.

Butterworth-Heinemann was merely cited for disclosing a CAM that can be used to impart motion on a mating component. Sclater et al was merely cited for disclosing a roller device with a groove in a bracket. However, neither of these references cure the aforementioned deficiencies of Yoshida et al and Askins et al.

Accordingly, it is respectfully submitted that the rejection of claims 1 and 3-6 under 35 U.S.C. §103(a) has been overcome.

If the Examiner has any comments, questions, objections or recommendations, the Examiner is invited to telephone the undersigned at the telephone number given below for prompt action.

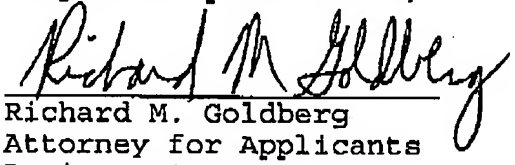
In the event that this Paper is late filed, and the necessary petition for extension of time is not filed concurrently herewith, please consider this as a Petition for the requisite extension of time, and to the extent not tendered by check attached hereto, authorization to charge the extension fee,

or any other fee required in connection with this Paper, to Account No. 07-1524.

The Commissioner is authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 07-1524.

In view of the foregoing amendments and remarks, it is respectfully submitted that Claims 1 and 3-6 are allowable, and early and favorable consideration thereof is solicited.

Respectfully submitted,



Richard M. Goldberg
Attorney for Applicants
Registration No. 28,215

25 East Salem Street
Suite 419
Hackensack, New Jersey 07601
TEL (201) 343-7775
FAX (201) 488-3884
e-mail: goldbergpat@earthlink.net